UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/865,988	05/25/2001	Prashanth B. Bhat	10130-017-999	5844

		EXAMINER
7590 05/03/2006		BULLOCK JR, LEWIS ALEXANDER

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ART UNIT	PAPER NUMBER
2195	

DATE MAILED: 05/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	**Applicant(s)**
Office Action Summary	09/865,988	BHAT ET AL.
	Examiner	**Art Unit**	
	Lewis A. Bullock, Jr.	2195	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>13 December 2005</u>.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-39</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-39</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>25 February 2001</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 101

1.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 25-27 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The cited claims detail a system for selecting a resource for processing a search query on the world wide web among a plurality of resources comprising an interface and control logic. To be a statutory machine category of invention there must be some tangible structure. M.P.E.P. 2106 details:

A *machine* is "a concrete thing, consisting of parts or of certain devices and combinations of devices." *Burr v. Duryee*, 68 U.S. (1 Wall.) 531, 570 (1863).

A review of the cited claims indicates the system having an interface and control logic for manipulating resources. All of the cited structures of the system can be interpreted to be software components without any physical part and therefore would not constitute a machine as defined above.

Claims 1-39 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The cited claims do not provide a useful, concrete, and tangible result as required for computer related process and products. The cited claims assign request **for** execution, but never executes the request. The useful, concrete, and tangible result would occur if the requests were executed. Therefore rewording the assigning clause to "assigning the search query to the first resource **and** servicing the search query", would alleviate this portion of the rejection.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

3.   Claims 1, 2, 4, 13, 4, 16, 25, 26, 28, 29, and 31 are rejected under 35 U.S.C.

103(a) as being unpatentable over HU (U.S. Patent 6,173,322) in view of

DEBETTENCOURT (U.S. Patent 6,279,001).

As to claim 1, HU teaches a method for choosing a resource (content server) for

processing a search query on the world wide web (network request), among a plurality

of resources (col. 4, lines 4-42), comprising: randomly selecting a first resource among

the plurality of resources in accordance with a predefined first random selection

function, the first resource having an associated first load value (via using a policy

module that selects a content server to service a request according to dynamic metric

by generating a random number in the range of 0 to 1 and comparing the number to

dynamic metric) (col. 9, line 49 – co. 10, line 46); and upon failure of a first resource;

selecting a second resource within a selected group (col. 11, line 46 – col. 12, line 9).

However, HU does not teach the failure is comparing the load value to a predetermined

threshold value to determine if the load value exceeds to the predetermined threshold.

DEBETTENCOURT teaches distributing request by comparing the first load

value to a predetermined threshold value to determine whether the first load value

exceeds the predetermined threshold value; and upon determining that the first load

value does not exceed the predetermined threshold value, assigning the search query

to the first resource for servicing the search query (via directing and redirecting request

from the interceptor to a web server such that if the web server becomes overloaded

that web server under the direction of a manager can refer the user to another web

server capable of handling the request wherein a threshold is used to specify if the web

server is considered heavily loaded such that request are redirected or handled) (col. 6,

line 44 – col. 7, line 5; col. 7, lines; col. 22, lines 37-60; col. 24, lines 35-42; col. 25, lines

15-29; col.16, lines 47-56; col. 8, lines 27-50). It would be obvious to one of ordinary

skill in the art that the failure of web server to handle the request would be the server is

overloaded. Therefore, it would be obvious to one of ordinary skill in the art to combine

the teachings of HU with the teachings of DEBETTENCOURT in order to redirect

request based on the load of the servers (col. 2, lines 6-17).

As to claim 2, HU teaches randomly selecting a second resource among the

plurality of resources in accordance with a predefined second random selection

function, the second resource having an associated second load value (via using a

policy module that selects a content server to service a request according to dynamic

metric by generating a random number in the range of 0 to 1 and comparing the number

to dynamic metric) (col. 9, line 49 – co. 10, line 46) and upon failure of a resource;

selecting another resource within a selected group (col. 11, line 46 – col. 12, line 9).

DEBETTENCOURT teaches distributed requests by comparing the second load value to the predetermined threshold value; and upon determining that the second load value does not exceed the predetermined threshold value, assigning the search query to the second resource for servicing the search query (via directing and redirecting request from the interceptor to a web server such that if the web server becomes overloaded that web server under the direction of a manager can refer the user to another web server capable of handling the request wherein a threshold is used to specify if the web server is considered heavily loaded such that request are redirected or handled) (col. 6, line 44 – col. 7, line 5; col. 7, lines; col. 22, lines 37-60; col. 24, lines 35-42; col. 25, lines 15-29; col.16, lines 47-56; col. 8, lines 27-50).

As to claim 4, HU teaches determining whether the first resource is unavailable for selection (node fails); upon determining that the first resource is unavailable for selection, determining which of the plurality of resources are available for selection and redefining the plurality of resources to include only those of the plurality of resources that are available for selection (re-querying policy module when a node has failed, i.e. failed to respond as determined by pinger module thereby removing the selection from the list) (col. 11, line 50 – col. 12, line 9; col. 15, lines 10-60), and then randomly selecting a resource from among the redefined plurality of resources (via using a policy module that selects a content server to service a request according to dynamic metric by generating a random number in the range of 0 to 1 and comparing the number to dynamic metric) (col. 9, line 49 – co. 10, line 46).

As to claims 13, 14 and 16, reference is made to a system that corresponds to the method of claims 1, 2 and 4 and is therefore met by the rejection of claims 1, 2 and 4 above.

As to claims 25 and 26, reference is made to a system that corresponds to the method of claim 1 and 2 and is therefore met by the rejection of claims 1 and 2 above.

As to claims 28, 29 and 31, reference is made to a program product that corresponds to the method of claims 1, 2 and 4 and is therefore met by the rejection of claims 1, 2 and 4 above.

4.   Claims 5, 9, 17, 21, 32 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over HU in view of DEBETTENCOURT as applied to claim 1 above, and further in view of "Performance of Hashing-Based Schemes for Internet Load Balancing" by Zhiruo CAO et al.

As to claims 5 and 9, HU and DEBETTENCOURT substantially disclose the invention above. However, the cited references do not teach the randomly selecting performing a hashing function.

CAO teaches a scheme for load balancing network processing by applying a one-way hashing function (hashing based approaches) to the search query (IP destination address / XOR destination and source address / table based / etc.) to

generate an intermediate value, applying a modulo function to the intermediate value to generate a second intermediate value (mod N to that result); and applying a mapping function for mapping the second intermediate value so as to select the resource from among the plurality of resources (via selecting the outgoing link of the corresponding server based on that calculation) (see pages 334-336). Therefore it would be obvious to one of ordinary skill in the art to combine the teachings of HU with the teachings of DEBETTENCOURT and CAO in order to improve Internet performance with improved traffic distribution schemes (abstract).

As to claims 17 and 21, reference is made to a system that corresponds to the method of claims 5 and 9 and is therefore met by the rejection of claims 5 and 9 above.

As to claims 32 and 36, reference is made to a program product that corresponds to the method of claims 5 and 9 and is therefore met by the rejection of claims 5 and 9 above.

Allowable Subject Matter

5.   Claims 3, 6-8, 10-12, 15, 18-20, 22-24, 30, 33-35 and 37-39 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims **with an indication that the assigned resource serviced the request to alleviate the 101 issue**.

6.   The following is a statement of reasons for the indication of allowable subject

matter: The cited claims indicate either (1) when both load values exceed the threshold

to assigning the request to the lower of the two load values and that resource services

the request (claims 3, 15, 27 and 30), or (2) the randomly selecting hashing function

uses values corresponding to the total load capacity, a probability density function, or a

weighted mapping function (claims 6-8, 10-12, 18-20, 22-24, 33-35 and 37-39). None of

the cited prior art of record teach the cited functionality or usage of values in

determining which server to handle the request. Therefore, the claims are allowable

over the cited prior art of record.

Response to Arguments

7.   Applicant's arguments with respect to claims 1-39 have been considered but are

moot in view of the new ground(s) of rejection.
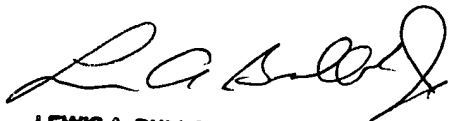

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Lewis A. Bullock, Jr. whose telephone number is (571)

272-3759. The examiner can normally be reached on Monday-Friday, 8:30 a.m. - 5:00

p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Meng An can be reached on (571) 272-3756. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

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you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

LEWIS A. BULLOCK, JR.
PRIMARY EXAMINER

April 29, 2006